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EXAMINER

ABELSON, RONALD B

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/869,069	Applicant(s) OHVO ET AL.	
	Examiner RONALD ABELSON	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/20/08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-12,14,18,19,21, and 23-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-12,14,18,19,21 and 23-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2007 and 01 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 23, 24, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah (US 6,400,695) in view of Shimojo (US 5,787,072).

Regarding claim 23, 24, and 27, Chuah teaches a mobile communications system (fig. 1).

Chuah teaches a first connection leg supporting flow control on a lower transmission protocol level underlying a user level (fig. 1 see connection between box 2 and 6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-41). Note, applicant's background states LAC supports flow control on a lower transmission protocol level underlying a user level (spec: pg. 4 lines 1-2).

Chuah teaches an intermediate second connection leg not supporting flow control on the lower transmission level (fig. 1 see connection Node-B 'connected to box 2' to box 10 to box 14 to Node-B 'connected to box 4', ATM, col. 2 lines 53-58). Note, applicant's background states ATM does not supporting flow control on the lower transmission level (pg. 4 line 17-18).

Chuah teaches a third connection leg supporting flow control on the lower transmission protocol level (fig. 1 see connection between box 4 and 6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-41).

Chuah teaches a first network element of the mobile communications system between the first and second legs (fig. 1 box 6 that is connected to box 2).

Chuah teaches a second network element of the mobile communications system between the second and third legs (fig. 1 box 6 that is connected to box 4).

Chuah teaches the first leg is at the air interface between a mobile station and one of the network elements (fig. 1 box 2, WCDMA, col. 2 lines 1-5).

Although Chuah teaches lower level flow control information, the reference is silent on the first and second

Art Unit: 2619

network elements are configured to tunnel lower level flow control information through the lower transmission protocol level of the second leg between said first and third legs in order to provide end-to-end flow control and thereby data integrity over the connection on the lower transmission protocol layer.

Shimojo teaches tunneling flow control information through the lower transmission protocol level (ATM, col. 1 lines 12-14) of the second leg between said first and third legs in order to provide end-to-end flow control and thereby data integrity over the connection on the lower transmission protocol layer (large number of switching nodes not having flow control, tunneling, downstream flow control function will transmit control information to upstream apparatus, col. 3 lines 48-67). The examiner corresponds the applicant's second leg with the large number of switching nodes not having flow control in the reference.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Chuah by tunneling lower level flow control information from through the ATM network, as suggested by Shimojo. This modification can be performed according to the teachings of Shimojo. This

Art Unit: 2619

modification would benefit by allowing for the transmission of flow control information to be transported between the first and second networks.

3. Claims 1, 14, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah (US 6,400,695) in view of Shimojo, and Edholm (US 6,600,721).

Regarding claim 1, 14, and 28, Chuah teaches a mobile communications system (fig. 1).

Chuah teaches a first connection leg supporting flow control on a lower transmission protocol level underlying a user level (fig. 1 see connection between box 2 and 6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-41). Note, applicant's background states LAC supports flow control on a lower transmission protocol level underlying a user level (spec: pg. 4 lines 1-2).

Chuah teaches an intermediate second connection leg not supporting flow control on the lower transmission level (fig. 1 see connection Node-B 'connected to box 2' to box 10 to box 14 to Node-B 'connected to box 4', ATM, col. 2 lines 53-58). Note, applicant's background states ATM does not supporting flow control on the lower transmission level (pg. 4 line 17-18).

Art Unit: 2619

Chuah teaches a third connection leg supporting flow control on the lower transmission protocol level (fig. 1 see connection between box 4 and 6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-41).

Chuah teaches a first node between the first and second legs (fig. 1 box 6 that is connected to box 2).

Chuah teaches a second node between the second and third legs (fig. 1 box 6 that is connected to box 4).

Chuah teaches the first leg is at the air interface between a mobile station and one of the network elements (fig. 1 box 2, WCDMA, col. 2 lines 1-5).

Although Chuah teaches lower level flow control information, the reference is silent on tunnelling lower level flow control information as in-channel signaling through the lower transmission protocol level of the second leg between said first and third legs in order to provide end-to-end flow control and thereby data integrity over the connection on the lower transmission protocol layer.

Shimojo teaches tunneling flow control information through the lower transmission protocol level (ATM, col. 1 lines 12-14) of the second leg between said first and third legs in order to provide end-to-end flow control and thereby data integrity over

Art Unit: 2619

the connection on the lower transmission protocol layer (large number of switching nodes not having flow control, tunneling, downstream flow control function will transmit control information to upstream apparatus, col. 3 lines 48-67). The examiner corresponds the applicant's second leg with the large number of switching nodes not having flow control in the reference.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Chuah by tunneling lower level flow control information from through the ATM network, as suggested by Shimojo. This modification can be performed according to the teachings of Shimojo. This modification would benefit by allowing for the transmission of flow control information to be transported between the first and second networks.

Although the combination teaches tunneling, the combination is silent on tunneling to flow control information using in-channel/in-band signaling.

Edholm teaches flow control information using in-channel/in-band signaling (col. 1 lines 36-37).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of

Chuah and Shimojo by tunneling the flow control information using in-band flow control. This modification can be performed according to the teachings of Edholm. This modification would benefit the system since separate bands for data and flow control would not be needed.

4. Claims 3, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Chuah, Shimojo, and Edholm as applied to claim 1 above, and further in view of Akiyoshi (US 5,668,812).

Regarding claim 3, although the combination teaches the second leg is an ATM connection (Chuah: fig. 1 see connection Node-B 'connected to box 2' to box 10 to box 14 to Node-B 'connected to box 4', ATM, col. 2 lines 53-58), the combination is silent on the lower transmission protocol level includes an ATM adaptation layer.

Akiyoshi teaches an ATM adaptation layer (col.1 lines 39-43).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by incorporating an ATM adaptation layer, as suggested by Akiyoshi. Adhering to ATM standards can perform this modification. This

Art Unit: 2619

modification would benefit the system since the ATM adaptation layer performs flow control (Akiyoshi: col.1 lines 39-43).

Regarding claim 4, although Akiyoshi teaches the ATM adaptation layer performs flow control (AAL, convergence sublayer, flow control conducted, col.1 lines 39-43), the reference is silent on transporting the ATM adaptation layer service data unit to the other end of the second leg in accordance with an ATM network protocol, and extracting the flow control information from the ATM adaptation layer service data unit at said other end of the second leg. Regarding the limitations of "transporting" and "extracting", with respect to KSR, the courts have determined "choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success" is not patentable.

(1) As shown by the applicant's admitted prior art, the problem that ATM does not supporting flow control on the lower transmission level (pg. 4 line 17-18), was well known in the art.

(2) As shown by Akiyoshi, at the time of the invention using the ATM adaptation layer to perform flow control was well known in the art. Furthermore, as shown by Shimojo, tunneling, i.e. "transporting" and "extracting" flow control information

Art Unit: 2619

across an ATM connection, was well known in the art (large number of switching nodes not having flow control, tunneling, downstream flow control function will transmit control information to upstream apparatus, col. 3 lines 48-67).

(3) Therefore, it would have been obvious to one of ordinary skill in the art to have pursued one of the known potential solutions with a reasonable expectation of success by "transporting" and "extracting" flow control information across the ATM adaptation layer as suggested by the combination of Akiyoshi and Shimojo.

Regarding claim 6, although the combination teaches the second leg is an ATM connection tunneling flow control information, the combination is silent on the flow control information in ATM cells in an ATM layer.

Akiyoshi teaches the flow control information in ATM cells in an ATM layer (convergence sublayer in which flow control is conducted, col.1 lines 39-43).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by performing flow control information in the ATM adaptation layer, as suggested by Akiyoshi. Adhering to ATM standards can perform

this modification. This modification would benefit the system since the ATM adaptation layer performs flow control (Akiyoshi: col.1 lines 39-43).

5. Claims 7, 18, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah in view of Shimojo, Williams (US 6,317,455), and Akiyoshi.

Regarding claims 7, 18, and 29, Chuah teaches transmitting data over a connection comprising a first leg supporting flow control on a lower transmission protocol level underlying a user level (fig. 1 see connection between box 2 and 6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-41), an intermediate second leg not supporting flow control on the lower transmission level (fig. 1 see connection Node-B 'connected to box 2' to box 10 to box 14 to Node-B 'connected to box 4', ATM, col. 2 lines 53-58). Note, applicant's background states ATM does not supporting flow control on the lower transmission level (pg. 4 line 17-18), and a third leg supporting flow control on the lower transmission protocol level, wherein said second leg comprises an ATM connection (fig. 1 see connection between box 4 and 6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-41).

Chuah teaches a first node between the first and second legs (fig. 1 box 6 that is connected to box 2).

Chuah teaches a second node between the second and third legs (fig. 1 box 6 that is connected to box 4).

Chuah is silent on tunneling the flow control information over the second leg.

Shimojo teaches tunneling flow control information over the second leg (ATM, col. 1 lines 12-14)

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Chuah by tunneling lower level flow control information from through the ATM network, as suggested by Shimojo. This modification can be performed according to the teachings of Shimojo. This modification would benefit by allowing for the transmission of flow control information to be transported between the first and second networks.

Although the combination teaches tunneling flow control information over the second leg, the combination is silent on an out-of-traffic-channel signaling associated with the connection.

Williams teaches flow control information using an out-of-traffic channel (col. 5 lines 32-36).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by tunneling the flow control information using an out-of-traffic channel. This modification can be performed according to the teachings of Williams. This modification would benefit the system since by having two separate channels, more bandwidth can be devoted to transmitting the data.

The combination is silent on the second leg comprises an ATM adaptation layer.

Akiyoshi teaches an ATM adaptation layer (col.1 lines 39-43).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by incorporating an ATM adaptation layer, as suggested by Akiyoshi. Adhering to ATM standards can perform this modification. This modification would benefit the system since the ATM adaptation layer performs flow control (Akiyoshi: col.1 lines 39-43).

6. Claims 8-12, 19, 21, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah in view of Shimojo, Akiyoshi, and Edholm.

Regarding claims 8, 10, 12, 19, 21, 25, and 26, Chuah teaches transmitting data over a connection comprising a first leg supporting flow control on a lower transmission protocol level underlying a user level (fig. 1 see connection between box 2 and 6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-41), an intermediate second leg not supporting flow control on the lower transmission level (fig. 1 see connection Node-B 'connected to box 2' to box 10 to box 14 to Node-B 'connected to box 4', ATM, col. 2 lines 53-58). Note, applicant's background states ATM does not supporting flow control on the lower transmission level (pg. 4 line 17-18), and a third leg supporting flow control on the lower transmission protocol level, wherein said second leg comprises an ATM connection (fig. 1 see connection between box 4 and 6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-41).

Chuah teaches a first node between the first and second legs (fig. 1 box 6 that is connected to box 2).

Chuah teaches a second node between the second and third legs (fig. 1 box 6 that is connected to box 4).

Chuah teaches the second leg comprises an ATM connection (ATM, col. 2 lines 53-58).

Chuah is silent on tunneling the flow control information over the second leg.

Shimojo teaches tunneling flow control information over the second leg (ATM, col. 1 lines 12-14).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Chuah by tunneling lower level flow control information from through the ATM network, as suggested by Shimojo. This modification can be performed according to the teachings of Shimojo. This modification would benefit by allowing for the transmission of flow control information to be transported between the first and second networks.

The combination is silent on the second leg comprises an ATM adaptation layer.

Akiyoshi teaches an ATM adaptation layer (col.1 lines 39-43).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by incorporating an ATM adaptation layer, as suggested by Akiyoshi. Adhering to ATM standards can perform this modification. This modification would benefit the system since the ATM adaptation layer performs flow control (Akiyoshi: col.1 lines 39-43).

The combination is silent on recognizing at a first node between the first and second legs a need to start a flow control towards the second leg, sending a flow control ON request over the second leg, receiving the flow control ON request at a second node between the second and third legs, stopping sending new data or decreasing data rate from the second node to the first node over the second leg in response to the flow control ON request.

Edholm teaches a method for recognizing at a first node between the first and second legs a need to start a flow control towards the second leg, sending a flow control ON request over the second leg, receiving the flow control ON request at a second node between the second and third legs, stopping sending new data or decreasing data rate from the second node to the first node over the second leg in response to the flow control ON request (data 'off', col. 1 lines 36-44). The examiner corresponds the applicant's 'flow control ON request' with the data 'off' signal of the reference.

Regarding claims 9 and 11, the combination is silent on recognizing at the first node a need of stopping the flow

Art Unit: 2619

control towards the second leg, sending a flow control OFF request over the second leg, receiving the flow control OFF request at the second node, starting sending new data or increasing data rate from the second node to the first over the second leg in response to said flow control off request.

Edholm teaches a method for recognizing at the first node a need of stopping the flow control towards the second leg, sending a flow control OFF request over the second leg, receiving the flow control OFF request at the second node, starting sending new data or increasing data rate from the second node to the first over the second leg in response to said flow control off request (data 'on', col. 1 lines 36-44). The examiner corresponds the applicant's 'flow control OFF request' with the data 'on' signal of the reference.

Regarding claim 12, 21, 26, the combination is silent on recognizing the need for starting or stopping the flow being based on the status of a receiving or transmitting buffer in the first node or on incoming flow control information received over the first leg.

Edholm teaches recognizing the need for starting or stopping the flow being based on the status of a receiving or transmitting buffer in the first node or on incoming flow

control information received over the first leg (off signal stops flow of data until data within buffer is consumed, col. 1 lines 36-44).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Chuah, Gerszberg, and Newton by stopping or starting the sending of data between nodes according to the teachings of Edholm. This modification can be performed in software. This modification would benefit the system by preventing overflow in the receiving buffer and allowing for the restarting of the transmission.

7. Claims 5 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah (US 6,400,695) in view of Shimojo, and Akiyoshi.

Chuah teaches a mobile communications system (fig. 1).

Chuah teaches a first connection leg supporting flow control on a lower transmission protocol level underlying a user level (fig. 1 see connection between box 2 and 6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-41). Note, applicant's background states LAC supports flow control on a lower transmission protocol level underlying a user level (spec: pg. 4 lines 1-2).

Chuah teaches an intermediate second connection leg not supporting flow control on the lower transmission level (fig. 1 see connection Node-B 'connected to box 2' to box 10 to box 14 to Node-B 'connected to box 4', ATM, col. 2 lines 53-58). Note, applicant's background states ATM does not supporting flow control on the lower transmission level (pg. 4 line 17-18).

Chuah teaches a third connection leg supporting flow control on the lower transmission protocol level (fig. 1 see connection between box 4 and 6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-41).

Chuah teaches a first node between the first and second legs (fig. 1 box 6 that is connected to box 2).

Chuah teaches a second node between the second and third legs (fig. 1 box 6 that is connected to box 4).

Chuah teaches the first leg is at the air interface between a mobile station and one of the network elements (fig. 1 box 2, WCDMA, col. 2 lines 1-5).

Although Chuah teaches lower level flow control information, the reference is silent on tunnelling lower level flow control information as in-channel signaling through the lower transmission protocol level of the second leg between said first and third legs in order to provide end-to-end flow control

and thereby data integrity over the connection on the lower transmission protocol layer.

Shimojo teaches tunneling flow control information through the lower transmission protocol level (ATM, col. 1 lines 12-14) of the second leg between said first and third legs in order to provide end-to-end flow control and thereby data integrity over the connection on the lower transmission protocol layer (large number of switching nodes not having flow control, tunneling, downstream flow control function will transmit control information to upstream apparatus, col. 3 lines 48-67). The examiner corresponds the applicant's second leg with the large number of switching nodes not having flow control in the reference.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Chuah by tunneling lower level flow control information from through the ATM network, as suggested by Shimojo. This modification can be performed according to the teachings of Shimojo. This modification would benefit by allowing for the transmission of flow control information to be transported between the first and second networks.

Although Akiyoshi teaches the ATM adaptation layer performs

Art Unit: 2619

flow control (AAL, convergence sublayer, flow control conducted, col.1 lines 39-43), the reference is silent on transporting the ATM adaptation layer service data unit to the other end of the second leg in accordance with an ATM network protocol, and extracting the flow control information from the ATM adaptation layer service data unit at said other end of the second leg. Regarding the limitations of "transporting" and "extracting", with respect to KSR, the courts have determined "choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success" is not patentable.

(1) As shown by the applicant's admitted prior art, the problem that ATM does not supporting flow control on the lower transmission level (pg. 4 line 17-18), was well known in the art.

(2) As shown by Akiyoshi, at the time of the invention using the ATM adaptation layer to perform flow control was well known in the art. Furthermore, as shown by Shimojo, tunneling, i.e. "transporting" and "extracting" flow control information across an ATM connection, was well known in the art (large number of switching nodes not having flow control, tunneling, downstream flow control function will transmit control information to upstream apparatus, col. 3 lines 48-67).

Furthermore, there is a finite number of ways to "insert" the

flow control bit or bits into an ATM adaptation layer service data unit and it would have been reasonable for one to try at least one of the steps of "inserting".

(3) Therefore, it would have been obvious to one of ordinary skill in the art to have pursued one of the known potential solutions with a reasonable expectation of success by "inserting", "transporting" and "extracting" flow control information across the ATM adaptation layer as suggested by the combination of Akiyoshi and Shimojo.

Response to Arguments

8. Applicant's arguments filed 2/20/2008 have been fully considered but they are not persuasive.

The examiner disagrees with the applicant's contentions with respect to Chuah (applicant: pg. 19-20). The applicant states that the connection leg between another user equipment 4 and another node B-6 in fig. 1 does not correspond with the applicant's third leg since user equipment 4 is in a different subnetwork 18 than user equipment 2 (applicant: pg. 20 1st

paragraph). This statement is misleading. As stated in Chuah fig. 1 represents an exemplary UMTS access network (col. 2 lines 1-2). Furthermore, Chuah teaches that both remote terminals 2 and 4 communicate with base stations (Node-B) 6 via the W-CDMA protocol (col. 2 lines 1-5).

The examiner disagrees with the applicant's contention that the connection between the base stations B6 do not correspond with the second leg of the instant application (applicant: pg. 20 2nd paragraph). Regarding the second leg, Chuah teaches an ATM connection between all the base stations (Layer 2 of core network, i.e., right side of NODE-B is ATM, col. 2 lines 55-58).

Regarding Shimojo, the examiner disagrees with the applicant's contention that Shimojo does not teach a first second, and third leg (applicant: pg. 21 1st paragraph). With reference to col. 3 lines 48-67, Shimojo teaches switching nodes not having a flow control function between apparatuses having a flow control function. The examiner corresponds the first leg to be the connection from the first apparatus supporting flow control to a first apparatus that does not support flow control and the third leg to be a connection from a second apparatus that does not support flow control to the second apparatus that does support flow control. The examiner corresponds the second

Art Unit: 2619

leg to be the connection between the first apparatus that does not support flow control and the second apparatus that does not support flow control.

The examiner disagrees with the applicant's contention that Shimojo does not teach any flow control function (applicant: pg. 21 2nd paragraph). As stated in the Shimojo (col. 3 lines 48-67), "When there are switch nodes not having a flow control function between apparatuses having a flow control function, the apparatus having the downstream flow control function will transmit control information to an upstream apparatus ... If buffer too small, flow control information must be transmitted such as to suppress cell transmission beforehand". It is clear from the cited reference that a device having a flow control function is receiving flow control information from the apparatus having the downstream flow control function.

The examiner disagrees with the applicant's contentions with respect to the last paragraph of page 21. The applicant contends that Shimojo does not teach flow control on the first, second, and third legs. However, as shown in the paragraphs above, this contention is false.

Regarding independent claims 23, 24, and 27 (applicant: pg. 22-23), the applicant repeats the assertions with respect to

Art Unit: 2619

Chuah and Shimojo above and does not provide addition information why the claim limitations are not met.

The examiner disagrees with the applicant's assertion that Shimojo fails to teach tunneling layer two flow information through an intermediate leg not supporting layer two flow control (applicant: pg. 23 last paragraph - pg. 24 1st paragraph). Shimojo teaches ATM. It is well known that ATM is a layer two protocol and does not support layer two end-to-end flow control. Furthermore, Shimojo clearly teaches two legs supporting flow control (apparatuses having a flow control function, col. 3 lines 48-67) and an intermediate leg not supporting flow (large number of switch nodes not having a flow control function between the apparatuses, col. 3 lines 48-67). Furthermore, Shimojo teaches tunneling flow control information between the apparatuses having a flow control function (tunneling, apparatus having the downstream flow control function will transmit control information to the upstream apparatus, col. 3 lines 48-67). Note, the examiner corresponds Shimojo's "transmit control information" to tunneling layer two flow control since "tunnelling" is taught in the passage.

The examiner disagrees with the applicant's contention that Shimojo teaches away from the claimed invention (pg. 24 1st paragraph - pg. 25 1st paragraph). As shown above, Shimojo teaches the concept of tunneling flow control information over an ATM network between two legs that support flow control.

Regarding the applicant's assertion that Edholm teaches away from the claimed invention (applicant: pg. 25 last paragraph), the examiner disagrees. The cited portion of Edholm (col. 1 lines 36-37) states that in-band flow control is well known. Therefore, the applicant's use of in-band flow control is neither novel nor patentable.

Regarding independent claims 1, 14, and 28, the applicant merely restates his contention that the claims are patentable and does not provide any additional arguments (applicant: pg. 26-27).

Regarding the discussion on Akiyoshi (pg. 28 1st heading), the applicant only states that the addition of Akiyoshi does not cure the deficiencies in the combination of Chuah, Shimojo, and Edholm. As shown above, the examiner maintains that the combination is not deficient.

Regarding the discussion on Williams (pg. 28 - pg. 29), the applicant only states that the addition of Williams does not cure the deficiencies in the combination of Chuah, Shimojo, and Edholm. As shown above, the examiner maintains that the combination is not deficient.

Regarding independent claims 8, 10-12, 19, 21, 25, and 26, the applicant merely restates his contention that the claims are patentable and does not provide any additional arguments (applicant: pg. 31-35).

Applicant's arguments with respect to claims 5 and 30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONALD ABELSON whose telephone number is (571)272-3165. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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